

# WEICKMANN & WEICKMANN

Patentanwälte  
European Patent Attorneys · European Trademark and Design Attorneys

WEICKMANN & WEICKMANN, Postfach 860 820, 81635 München

Shiga International Patent Office  
Mr. Masatake Shiga  
2-3-1 Yaesu  
Chuo-ku

Tokyo 104-8453  
JAPAN

IHR ZEICHEN / YOUR REF. **OSP-1078** UNSER ZEICHEN / OUR REF. **25426P EP/PRha**

European Patent Application No. 01 112 618.2  
Title: Method and apparatus for position detection  
Honda Giken Kogyo Kabushiki Kaisha

Dear Mr. Shiga:

With reference to our letter dated Sep 14, 2004 we have now received the complete search report of the EPO, copy of which is enclosed. Copies of the publications considered to be relevant are also enclosed.

We recommend that the references for categories X and Y - if any - be examined carefully. This can be of importance for the later decision whether examination should be requested or, in case it has already been requested, whether it should be maintained.

In the annex to the search report the corresponding printed patent specifications in other countries are indicated for the cited printed patent specifications.

Please note that the present search report has been drawn up for all claims.

We further advise you that the EPO approved the following items:

(x) Abstract                      ( ) Title                      (x) Drawing

Very truly yours,



Dr. J. Prechtel

Postfach 860 820  
81635 München

Kopernikusstraße 9  
81679 München

Telefon

Telefax

E-Mail

(089) 45563 0  
(0700) WEICKMAN  
(089) 45563 999  
email@weickmann.de

Encls.

Communication  
search report  
publications

Hypovereinsbank München  
Konto 208 401 (BLZ 700 202 70)  
S.W.I.F.T.-Adresse HYVE DE MM  
Postbank München

Dipl.-Ing. H. WEICKMANN (bis 2001)  
Dipl.-Ing. F. A. WEICKMANN  
Dipl.-Chem. B. HUBER  
Dr.-Ing. H. LISK  
Dipl.-Phys. Dr. J. PRECHTEL  
Dipl.-Chem. Dr. B. BOHM  
Dipl.-Chem. Dr. W. WEISS  
Dipl.-Phys. Dr. J. TIESMEYER  
Dipl.-Phys. Dr. M. HERZOG  
Dipl.-Phys. Dr. B. RUTTENSBERGER  
Dipl.-Phys. Dr.-Ing. V. JORDAN  
Dipl.-Chem. Dr. M. DEY  
Dipl.-Forstw. Dr. J. LACHNIT  
LL.M. Dr. U. W. HERBERTH  
Dr.-Ing. H.-J. TROSSIN  
\* Rechtsanwältin

DATUM / DATE  
Jan 05, 2005

BEST AVAILABLE COPY



P.B.5818 - Patentlaan 2  
2280 HV Rijswijk (ZH)  
☎ +31 70 340 2040  
TX 31651 epo nl  
FAX +31 70 340 3016

Europäisches  
Patentamt

Zweigstelle  
in Den Haag  
Recherchen-  
abteilung

European  
Patent Office

Branch at  
The Hague  
Search  
division

Office européen  
des brevets

Département à  
La Haye  
Division de la  
recherche

Prechtel, Jörg, Dipl.-Phys. Dr.  
Weickmann & Weickmann  
Patentanwälte  
Postfach 86 08 20  
81635 München  
ALLEMAGNE

Weickmann & Weickmann

E 3 0. DEZ. 2004

Frist:  
Patentanwälte

Datum/Date

2 8. 12. 04

Zeichen/Ref./Réf. 25426P EP	Anmeldung Nr./Application No./Demande n°/Patent Nr./Patent No./Brevet n°. 01112618.2
Anmelder/Applicant/Demandeur/Patentinhaber/Proprietor/Titulaire Honda Giken Kogyo Kabushiki Kaisha	

## COMMUNICATION

The European Patent Office herewith transmits

- ☒ the European search report
- ☐ the declaration under Rule 45 EPC
- ☐ the partial European search report under Rule 45 EPC
- ☐ the supplementary European search report concerning the international application under Article 157(2) EPC relating to the above-mentioned European patent application. Copies of the documents cited in the search report are enclosed.
- EP-A 56  
Re

The following specifications given by the applicant have been approved by the Search Division :

- ☒ Abstract ☐ Title ☒ Figure
- ☐ The abstract was modified by the Search Division and the definitive text is attached to this communication.
- ☐ The following figure will be published with the abstract, since the Search Division considers that it better characterises the invention than the one indicated by the applicant.

Figure:

- ☒ Additional copy(copies) of the documents cited in the European search report.

## REFUND OF THE SEARCH FEE

If applicable under Article 10 Rules relating to fees, a separate communication from the Receiving Section on the refund of the search fee will be sent later.



EPO Form 1507 02.93

--	--	--	--	--



### CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

### LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- ☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1, 6, 11

Eliminating moving reference points from the position  
calculation

---

2. claims: 2,7,12

Reducing the effect of variations in distance data obtained  
from images in the process of determining the position

---

3. claims: 3,4,8,9,13,14

Increasing the accuracy of the calculation of the position  
by using only the reference characteristic points whose  
positions are known with most certainty

---

4. claims: 5,10,15

Enabling the calculation of a position in cases when a  
geometric calculation of position is not possible

---



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
R1 X	WO 99/53335 A (POROPAT GEORGE ; COMMW SCIANT IND RES ORG (AU)) 21 October 1999 (1999-10-21) * the whole document *	1-4,6-9, 11-14	G01S11/12
Y		5,10,15	
R2 A	US 5 777 690 A (TAKEDA NOBUYUKI ET AL) 7 July 1998 (1998-07-07) * abstract *	1,6,11	
R3 A	US 5 051 906 A (KING STEVEN J ET AL) 24 September 1991 (1991-09-24) * abstract * * Background of the Invention * * column 1, line 18 - line 44 * * column 3, line 50 - column 4, line 57 * * column 2, line 3 - line 9 *	2,7,12	
R4 A	WO 99/21026 A (HOLMQUIST FREDRIK ; APOGEUM AB (SE)) 29 April 1999 (1999-04-29) * abstract * * page 3, line 13 - line 30 * * page 6, line 7 - line 14 * * page 7, line 13 - line 29 * * page 8, line 15 - line 22 * * page 9, line 21 - line 27 * * page 10, line 24 - page 13, line 8 * ----- -/-	2-4,7-9, 12-14	TECHNICAL FIELDS SEARCHED (Int.Cl.7)  G01S
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 15 December 2004	Examiner Ó Donnabháin, C.
<div>CATEGORY OF CITED DOCUMENTS</div> <div><div>X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document</div><div>T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons ----- &amp; : member of the same patent family, corresponding document</div></div>			



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
R5 X	CHENAVIER F ET AL: "Position estimation for a mobile robot using vision and odometry" PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON ROBOTICS AND AUTOMATION NICE, MAY 12 - 14, 1992, LOS ALAMITOS, IEEE COMP. SOC. PRESS, US, vol. VOL. 3 CONF. 8, 12 May 1992 (1992-05-12), pages 2588-2593, XP010027677 ISBN: 0-8186-2720-4 * abstract * * page 2588, left-hand column * * 4. Updating the robot position *	2,7,12	
R6 X	GB 2 116 000 A (ELLIOTT BROS) 14 September 1983 (1983-09-14) * page 1, line 58 - line 122 *	5,10,15	
R7 X	KOKICHI SUGIHARA: "SOME LOCATION PROBLEMS FOR ROBOT NAVIGATION USING A SINGLE CAMERA" COMPUTER VISION GRAPHICS AND IMAGE PROCESSING, ACADEMIC PRESS, DULUTH, MA, US, vol. 42, no. 1, 1 April 1988 (1988-04-01), pages 112-129, XP000110801 * the whole document *	3,4,8,9,13,14	TECHNICAL FIELDS SEARCHED (Int.Cl.7)
R3 Y	EP 0 892 278 A (FORSVARETS FORSKNING) 20 January 1999 (1999-01-20) * abstract *	5,10,15	
The present search report has been drawn up for all claims			
4	Place of search Munich	Date of completion of the search 15 December 2004	Examiner Ó Donnabháin, C
CATEGORY OF CITED DOCUMENTS			
X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons &: member of the same patent family, corresponding document			

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 01 11 2618

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

15-12-2004

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9953335	A	21-10-1999	AU 756108 B2	02-01-2003
			AU 3132299 A	01-11-1999
			WO 9953335 A1	21-10-1999
			CA 2328227 A1	21-10-1999
			EP 1086383 A1	28-03-2001
			JP 3561473 B2	02-09-2004
			JP 2002511614 T	16-04-2002
			US 2002049530 A1	25-04-2002
			ZA 200005640 A	14-01-2002
US 5777690	A	07-07-1998	JP 3435240 B2	11-08-2003
			JP 8194822 A	30-07-1996
			JP 3432937 B2	04-08-2003
			JP 8249472 A	27-09-1996
US 5051906	A	24-09-1991	NONE	
WO 9921026	A	29-04-1999	SE 511504 C2	11-10-1999
			AT 235690 T	15-04-2003
			AT 213335 T	15-02-2002
			AU 752054 B2	05-09-2002
			AU 9657398 A	10-05-1999
			AU 755485 B2	12-12-2002
			AU 9657498 A	10-05-1999
			CA 2305600 A1	29-04-1999
			CA 2307206 A1	29-04-1999
			CN 1276873 T	13-12-2000
			CN 1276874 T	13-12-2000
			DE 69803868 D1	21-03-2002
			DE 69803868 T2	28-11-2002
			DE 69812673 D1	30-04-2003
			DE 69812673 T2	19-02-2004
			EP 1023610 A1	02-08-2000
			EP 1023611 A1	02-08-2000
			JP 2001521211 T	06-11-2001
			JP 2001521212 T	06-11-2001
			NO 20001942 A	30-05-2000
			NO 20001978 A	14-04-2000
			SE 9703779 A	18-04-1999
			WO 9921026 A1	29-04-1999
			WO 9921027 A1	29-04-1999
			US 6308118 B1	23-10-2001
			US 6259979 B1	10-07-2001
GB 2116000	A	14-09-1983	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 01 11 2618

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

15-12-2004

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0892278	A	20-01-1999	NO 973275 A	18-01-1999
			EP 0892278 A2	20-01-1999

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82



**This Page is Inserted by IFW Indexing and Scanning  
Operations and is not part of the Official Record**

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☐ FADED TEXT OR DRAWING
- ☐ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☐ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: \_\_\_\_\_

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.**

**THIS PAGE BLANK (USPTO)**